SEQUENCE LISTING

<110> Caimi, Perry G.
Famodu, Omolayo O.
Lee, Jiang-Ming
Miao, Guo-Hua
Maxwell, Carl A.

<120> Disease Resistance Factors

<130> BB-1356

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tctaacagat ctcagggcat ccccagagta tcttaccctc cttgtgcgca actgtcaacg 180
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Glu Thr Leu Asn Phe Phe Leu Thr Asp Leu Arg Ala Ser Pro Glu Tyr
35 40 45

Leu Thr Leu Leu Val Arg Asn Cys Gln Arg Leu Lys Thr Leu Lys Ile
50 55 60

Ser Glu Cys Phe Met Pro Asp Leu Val Ser Leu Phe Arg Thr Ala Gln
65 70 75 80

Thr Leu Gln Glu Phe Ala Gly Gly Ser Phe Glu Glu Gln Gly Gln Pro
85 90 95

Val Ala Ser Arg Asn Tyr Glu Asn Tyr Tyr Phe Pro Pro Ser Leu His
100 105 110

Arg Leu Ser Leu Leu Tyr Met Gly Thr Asn Asp Met Gln Ile Leu Xaa
115 120 125

Pro Tyr Ala Thr Ala Leu Lys Lys Leu Asp Leu Gln Phe Thr Phe Leu
130 135 140

Ser Thr Glu Asp His Xaa Gln Ile Val Gln Arg Cys Ser Asn Leu Glu
145 150 155 160

Thr Leu Glu Val Arg Asp Val Ile Gly Asp Arg Gly Leu Gln Xaa Gly
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Ala Gln Thr Cys Lys Lys Leu His Arg Leu Arg Val Glu Arg Gly Asp
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caggtttgca agaagaacaa ggaggagtct ctcaagtcgg gttgacaact gtagccgtag 180
gatgccgtga actggaatac atagctgcct atgtgtctga tatcacaaat ggggccctgg 240
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Arg Gly Asp Asp Asp Pro Gly Leu Gln Glu Glu Gln Gly Gly Val Ser
35 40 45

Gln Val Gly Leu Thr Thr Val Ala Val Gly Cys Arg Glu Leu Glu Tyr
50 55 60

Ile Ala Ala Tyr Val Ser Asp Ile Thr Asn Gly Ala Leu Glu Ser Ile
65 70 75 80

Gly Thr Phe Cys Lys Asn Leu Cys Asp Phe Arg Leu Val Leu Leu Asp
85 90 95

Arg Glu Glu Arg Ile Thr Asp Leu Pro Leu Asp Asn Gly Val Arg Ala
100 105 110

Leu Leu Xaa Gly Cys Thr Lys Leu Arg Arg Phe Ala Leu Tyr Leu Arg
115 120 125

Pro Gly Gly Leu Ser Asp Thr Gly Leu Gly Tyr Ile Gly Gln Tyr Ser
130 135 140

Gly Ile Ile Gln Tyr Met Leu Leu Gly Asn Val Gly Glu Thr Asp Asp
145 150 155 160

Gly Leu Ile Arg Phe Ala Leu Gly Cys Glu Asn Leu Arg Lys Leu Glu
165 170 175

Leu Arg Ser Cys Cys Phe Ser Glu Gln Ala Leu Ala Arg Ala Ile Arg
180 185 190

Ser Met Pro Ser Leu Arg Tyr Val Trp Val Gln Gly Tyr Lys Ala Ser
195 200 205

Lys Thr Gly His Asp Leu Met Leu Met Ala Arg Pro Phe Trp Asn Ile
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Glu Phe Thr Pro Pro Arg Arg Leu Val Thr Ile Ser
225 230 235

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ccgcaagcac gtcaccatcg cgctctgcta caccaccacc ccggctcgcc tccgccgccg 180
cttcccgcac ctcgagtcgc tcaagctcaa gggcaagccc cgagccgcaa tgttcaactt 240
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tcgattgcct caagagcctc cacttccgcc gcatgattgt caagggattc cgatcttcag 360
aatctcgctc gtgaccgcgg tcacgtgctt cacgctctca aagcttgaca agtgctccgg 420
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20 25 30

Ser Leu Thr Arg Lys His Val Thr Ile Ala Leu Cys Tyr Thr Thr Thr
35 40 45

Pro Ala Arg Leu Arg Arg Arg Phe Pro His Leu Glu Ser Leu Lys Leu
50 55 60

Lys Gly Lys Pro Arg Ala Ala Met Phe Asn Leu Ile Pro Glu Asp Trp
65 70 75 80

Gly Gly His Val Thr Pro Trp Val Lys Glu Ile Ser Gln Val Leu Arg
85 90 95

Xaa Leu Lys Ser Leu His Phe Arg Arg Met Ile Val
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catgttgctt gggaatgccg gggggtctga tgatggactg ctggcatttg cacgangatg 360
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tgcagcctta cagctgaagt cactcagata tctttgggtg cagggataca aggcatctcc 480
tactggcacc gatctcatgg caatggtacg ccccttctgg aacattgagt ttattgcacc 540
aaatcaagat gagccttgcc cagagggtca ggacagattt ggcatactac tctctggtgg 600
ggaaggcaga ttgtcctagt cagtattccc tccatcgtag tgggagctaa aagaccacca 660
ccagtttact gacancatgt tgatgcagna accacatcgg anaggaattc actacagtgc 720
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Phe Ser Lys Asn Leu Asn Asp Phe Arg Leu Val Leu Leu Asp Arg Glu
35 40 45

Val His Ile Thr Glu Leu Pro Leu Asp Asn Gly Val Arg Ala Leu Leu
50 55 60

Arg Gly Cys Thr Lys Leu Arg Arg Phe Ala Phe Tyr Val Arg Pro Gly
65 70 75 80

Ala Leu Ser Asp Leu Ala Phe Leu Xaa Leu Gly Glu Phe Ser Lys Thr
85 90 95

Val Arg Tyr Met Leu Leu Gly Asn Ala Gly Gly Ser Asp Asp Gly Leu
100 105 110

Leu Ala Phe Ala Arg Xaa Cys Pro Ser Leu Gln Lys Leu Glu Leu Arg
115 120 125

Ser Cys Cys Phe Ser Glu Arg Ala Leu Ala Val Ala Ala Leu Gln Leu
130 135 140

Lys Ser Leu Arg Tyr Leu Trp Val Gln Gly Tyr Lys Ala Ser Pro Thr
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20 25 30

Ala Thr Ala Thr Lys Pro Pro Met Leu Pro Lys Glu Phe Glu Asp Pro
35 40 45

Ala Phe Ser Thr Val Thr Ile Gln Arg Asp Leu Tyr Tyr Gly Tyr Asp
50 55 60

Thr Leu Met Glu Asn Val Ser Asp Pro Ser His Ile Glu Phe Ala His
65 70 75 80

His Lys Val Thr Gly Ser Lys Arg Ser Xaa Gln Ala Phe Cys Gln Phe
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Lys Asn Gly Asn Gln Ser Trp Cys Asn Gly Gly
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caatttttaa cgaaacaaac gcgacccaga agcagaagaa acctctccct aacccctgca 180
cgcgttgcgg cgccaccctc aacggttgaa gccgatcgat tatacccaga ggccgaaaat 240
aacgaaactg aggaagagtt tagcgacgag agctcttcct ctaaattcac ttggagggat 300
cactggtacc ctgtctcgtt aattgaagat ctgaaccctc tcttgcccac accgtttcag 360
cttctgggtc gtgaaatcgt gctctggtac gacaagtcca tttcccaatg ggttgctttt 420
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Leu Gly Arg Glu Ile Val Leu Trp Tyr Asp Lys Ser Ile Ser Gln Trp
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Val Ala Phe Asp Asp Lys Cys Pro His Arg Leu Ala Pro Leu Ser Glu
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Xaa Arg
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ggacctcttc tatgggtatg acacgttgat ggagaacgtc tctgatccct cgcatataga 180
atttgctcac cacaaggtca ctggacnaag agatanagcc aagcctttgc catttaaaat 240

ggaatcaant ggcncatggg gatattcang ggcaaatacc ggcaatcctc gcancactgc 300
aactttcgan gcccccttggc tatgcactgn aacanaatnn agattgacac caaattaacc 360
gattntggga gatcacaaat gggtcntatg gatttgctcc ttcnanattc caaaggccca 420
aggaaaatcg ttctattgtc cgtantgctc naaacttttc antttaaatn ccacnaagga 480
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tcagncacaa agttccgt 558

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Lys Ala Thr Lys Pro Pro Met Leu Pro Lys Glu Phe Asp Asp Pro Ala
20 25 30

Phe Ser Thr Val Thr Ile Gln Arg Asp Leu Phe Tyr Gly Tyr Asp Thr
35 40 45

Leu Met Glu Asn Val Ser Asp Pro Ser His Ile Glu Phe Ala His His
50 55 60

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Lys Val Thr Gly Xaa Arg Asp Xaa Ala Lys Pro Leu Pro Phe Lys Met
 65                  70                  75                  80

Glu Ser Xaa Gly Xaa Trp Gly Tyr Ser Xaa Ala Asn Thr Gly Asn Pro
                85                  90                  95

Arg Xaa Thr Ala Thr Phe Xaa Ala Pro
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aacaattctg ttctggtgac actgaacttc tacatgacag aactcaaagt ggagcctgcc 240
gatctggagc ttcttgcaag gaactgtaaa tcattgattt ctctgaagat gagtgactgc 300
gatctttcgg atttgatggt tttctccaaa cctccaaggc actgcaagaa ttcgctggag 360
gcgctttttt cgaaatcgga gagtacacca agtacgaaaa ggtcaagctc ccacctaagc 420
tatgcttctt ggggggtctt accttcatgg gtaaaaacga gatgcccgtt aatctttccg 480
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Arg Arg Ala Arg Pro Arg Ala Arg His Met Leu Gln Val Leu Lys Leu
  1               5                  10                  15

Asp Lys Cys Ser Gly Phe Ser Thr Asp Ala Leu Arg Leu Val Ala Arg
             20                  25                  30

Ser Cys Arg Ser Leu Arg Thr Leu Phe Leu Glu Glu Cys Xaa Ile Ala
         35                  40                  45
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Asp Glu Gly Ser Glu Trp Leu His Glu Leu Ala Val Asn Asn Ser Val
     50                  55                  60

Leu Val Thr Leu Asn Phe Tyr Met Thr Glu Leu Lys Val Glu Pro Ala
 65                  70                  75                  80

Asp Leu Glu Leu Leu Ala Arg Asn Cys Lys Ser Leu Ile Ser Leu Lys
                 85                  90                  95

Met Ser Asp Cys Asp Leu Ser Asp Leu Met Val Phe Ser Lys Xaa Ser
            100                 105                 110

Lys Ala Leu Gln Glu Phe Ala Gly Gly Ala Phe Phe Glu Ile Gly Glu
        115                 120                 125

Tyr Thr Lys Tyr Glu Lys Val Lys Leu Pro Pro Lys Leu Cys Phe Leu
    130                 135                 140

Gly Gly Leu Thr Phe Met Gly Lys Asn Glu Met Pro Val Asn Leu Ser
145                 150                 155                 160

Val Phe Cys Val Arg Leu Arg Asn Trp Thr Cys Ser Thr Leu Ser Leu
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Thr Thr Glu Asp His Cys Gln Leu Asn Arg
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<210> 17
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<212> DNA
<213> Zea mays

<400> 17

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actgtcaacg attgaaaact ctgaagatta gtgaatgttt catgcccgat ctggtcagtt  240
tgttccgaac tgcacaaaca ctacaagagt tcgctggtgg ttcctttgaa gagcagggtc  300
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gctgctccaa tctggaaacc ttagaggtga gggatgtcat aggggatcgt ggactacaag  540
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<210> 18
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<212> PRT
<213> Zea mays

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20 25 30

Ser Asn Ser Val Leu Glu Thr Leu Asn Phe Phe Leu Thr Asp Leu Arg
35 40 45

Ala Ser Pro Glu Tyr Leu Thr Leu Leu Val Arg Asn Cys Gln Arg Leu
50 55 60

Lys Thr Leu Lys Ile Ser Glu Cys Phe Met Pro Asp Leu Val Ser Leu
65 70 75 80

Phe Arg Thr Ala Gln Thr Leu Gln Glu Phe Ala Gly Gly Ser Phe Glu
85 90 95

Glu Gln Gly Gln Pro Val Ala Ser Arg Asn Tyr Glu Asn Tyr Tyr Phe
100 105 110

Pro Pro Ser Leu His Arg Leu Ser Leu Leu Tyr Met Gly Thr Asn Asp
115 120 125

Met Gln Ile Leu Phe Pro Tyr Ala Thr Ala Leu Lys Lys Leu Asp Leu
130 135 140

Gln Phe Thr Phe Leu Ser Thr Glu Asp His Cys Gln Ile Val Gln Arg
145 150 155 160

Cys Ser Asn Leu Glu Thr Leu Glu Val Arg Asp Val Ile Gly Asp Arg
165 170 175

Gly Leu Gln Val Val Ala Gln Thr Cys Lys Lys Leu His Arg Leu Arg
180 185 190

Val Glu Arg Gly Asp Asp Asp Gln Gly Gly Leu Glu Asp Glu Gln Gly
195 200 205

Arg Ile Ser Gln Val Gly Leu Met Ala Ile Ala Gln Gly Cys Pro Glu
210 215 220

Leu Thr Tyr Trp Ala Ile His Val Ser Asp Ile Thr Asn Ala Ala Leu
225 230 235 240

Glu Ala Val Gly Thr Cys Ser Lys Asn Leu Asn Asp Phe Arg Leu Val
245 250 255

Leu Leu Asp Arg Glu Ala His Ile Thr Glu Leu Pro Leu Asp Asn Gly
260 265 270

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Val Arg Ala Leu Leu Arg Gly Cys Thr Lys Leu Arg Arg Phe Ala Phe
        275                 280                 285

Tyr Val Arg Pro Gly Ala Leu Ser Asp Val Gly Leu Gly Tyr Val Gly
    290                 295                 300

Glu Phe Ser Lys Ser Ile Arg Tyr Met Leu Leu Gly Asn Val Gly Glu
305                 310                 315                 320

Ser Asp Asn Gly Ile Ile Gln Leu Ser Lys Gly Cys Pro Ser Leu Gln
                325                 330                 335

Lys Leu Glu Val Arg Gly Cys Leu Phe Ser Glu His Ala Leu Ala Leu
            340                 345                 350

Ala Ala Leu Gln Leu Lys Ser Leu Arg Tyr Leu Trp Val Gln Gly Phe
        355                 360                 365

Arg Ser Ser Pro Thr Gly Thr Asp Ile Met Ala Met Val Arg Pro Phe
    370                 375                 380

Trp Asn Ile Glu Tyr Ile Val Pro Asp Gln Asp Glu Pro Cys Pro Glu
385                 390                 395                 400

His Lys Arg Gln Ile Leu Ala Tyr Tyr Ser Leu Ala Gly Arg Arg Thr
                405                 410                 415

Asp Cys Pro Pro Ser Val Thr Leu Leu Tyr Pro Ala Phe
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<210> 19
<211> 2240
<212> DNA
<213> Oryza sativa

<400> 19

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<210> 20
<211> 597
<212> PRT
<213> Oryza sativa

<400> 20

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  1               5                  10                  15

Phe Gly Gly Ala Gly Ser Ile Pro Glu Glu Ala Leu His Leu Val Leu
            20                  25                  30

Gly Tyr Val Asp Asp Pro Arg Asp Arg Glu Ala Val Ser Leu Val Cys
        35                  40                  45

Arg Arg Trp His Arg Ile Asp Ala Leu Thr Arg Lys His Val Thr Val
    50                  55                  60

Pro Phe Cys Tyr Ala Ala Ser Pro Ala His Leu Leu Ala Arg Phe Pro
65                  70                  75                  80

Arg Leu Glu Ser Leu Ala Val Lys Gly Lys Pro Arg Ala Ala Met Tyr
                85                  90                  95

Gly Leu Ile Pro Glu Asp Trp Gly Ala Tyr Ala Arg Pro Trp Val Ala
            100                 105                 110

Glu Leu Ala Ala Pro Leu Glu Cys Leu Lys Ala Leu His Leu Arg Arg
        115                 120                 125

Met Val Val Thr Asp Asp Asp Leu Ala Ala Leu Val Arg Ala Arg Gly
    130                 135                 140

His Met Leu Gln Glu Leu Lys Leu Asp Lys Cys Ser Gly Phe Ser Thr
145                 150                 155                 160

Asp Ala Leu Arg Leu Val Ala Arg Ser Cys Arg Ser Leu Arg Thr Leu
                165                 170                 175

Phe Leu Glu Glu Cys Ser Ile Ala Asp Asn Gly Thr Glu Trp Leu His
            180                 185                 190

Asp Leu Ala Val Asn Asn Pro Val Leu Glu Thr Leu Asn Phe His Met
        195                 200                 205
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Thr Glu Leu Thr Val Val Pro Ala Asp Leu Glu Leu Leu Ala Lys Lys
210 215 220

Cys Lys Ser Leu Ile Ser Leu Lys Ile Ser Asp Cys Asp Phe Ser Asp
225 230 235 240

Leu Ile Gly Phe Phe Arg Met Ala Ala Ser Leu Gln Glu Phe Ala Gly
245 250 255

Gly Ala Phe Ile Glu Gln Gly Glu Leu Thr Lys Tyr Gly Asn Val Lys
260 265 270

Phe Pro Ser Arg Leu Cys Ser Leu Gly Leu Thr Tyr Met Gly Thr Asn
275 280 285

Glu Met Pro Ile Ile Phe Pro Phe Ser Ala Leu Leu Lys Lys Leu Asp
290 295 300

Leu Gln Tyr Thr Phe Leu Thr Thr Glu Asp His Cys Gln Leu Ile Ala
305 310 315 320

Lys Cys Pro Asn Leu Leu Val Leu Ala Val Arg Asn Val Ile Gly Asp
325 330 335

Arg Gly Leu Gly Val Val Ala Asp Thr Cys Lys Lys Leu Gln Arg Leu
340 345 350

Arg Val Glu Arg Gly Asp Asp Asp Pro Gly Leu Gln Glu Glu Gln Gly
355 360 365

Gly Val Ser Gln Val Gly Leu Thr Thr Val Ala Val Gly Cys Arg Glu
370 375 380

Leu Glu Tyr Ile Ala Ala Tyr Val Ser Asp Ile Thr Asn Gly Ala Leu
385 390 395 400

Glu Ser Ile Gly Thr Phe Cys Lys Asn Leu Cys Asp Phe Arg Leu Val
405 410 415

Leu Leu Asp Arg Glu Glu Arg Ile Thr Asp Leu Pro Leu Asp Asn Gly
420 425 430

Val Arg Ala Leu Leu Arg Gly Cys Thr Lys Leu Arg Arg Phe Ala Leu
435 440 445

Tyr Leu Arg Pro Gly Gly Leu Ser Asp Thr Gly Leu Gly Tyr Ile Gly
450 455 460

Gln Tyr Ser Gly Ile Ile Gln Tyr Met Leu Leu Gly Asn Val Gly Glu
465 470 475 480

Thr Asp Asp Gly Leu Ile Arg Phe Ala Leu Gly Cys Glu Asn Leu Arg
485 490 495

Lys Leu Glu Leu Arg Ser Cys Cys Phe Ser Glu Gln Ala Leu Ala Arg
500 505 510

Ala Ile Arg Ser Met Pro Ser Leu Arg Tyr Val Trp Val Gln Gly Tyr
515 520 525

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Lys Ala Ser Lys Thr Gly His Asp Leu Met Leu Met Ala Arg Pro Phe
    530                 535                 540

Trp Asn Ile Glu Phe Thr Pro Pro Ser Ser Glu Asn Ala Asn Arg Met
545                 550                 555                 560

Arg Glu Asp Gly Glu Pro Cys Val Asp Ser Gln Ala Gln Ile Leu Ala
                565                 570                 575

Tyr Tyr Ser Leu Ala Gly Lys Arg Ser Asp Cys Pro Arg Ser Val Val
            580                 585                 590

Pro Leu Tyr Pro Ala
        595
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<210> 21
<211> 2288
<212> DNA
<213> Glycine max

<400> 21

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gacgtgttac atcagtacat cacatcacat cacgtaaata taggtaataa gctcggaaaa  180
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tctccgatcc aatatgacgg aggaacggaa cgtgcggaag acacgtgtgg tcgacgtggt  360
cctcgactgc gtcatccctt acatcgacga ccccaaggac cgcgacgccg tttcccaggt  420
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<211> 606
<212> PRT
<213> Glycine max

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Met Thr Glu Glu Arg Asn Val Arg Lys Thr Arg Val Val Asp Val Val
20 25 30

Leu Asp Cys Val Ile Pro Tyr Ile Asp Asp Pro Lys Asp Arg Asp Ala
35 40 45

Val Ser Gln Val Cys Arg Arg Trp Tyr Glu Leu Asp Ser Leu Thr Arg
50 55 60

Lys His Val Thr Ile Ala Leu Cys Tyr Thr Thr Thr Pro Ala Arg Leu
65 70 75 80

Arg Arg Arg Phe Pro His Leu Glu Ser Leu Lys Leu Lys Gly Lys Pro
85 90 95

Arg Ala Ala Met Phe Asn Leu Ile Pro Glu Asp Trp Gly Gly His Val
100 105 110

Thr Pro Trp Val Lys Glu Ile Ser Gln Tyr Phe Asp Cys Leu Lys Ser
115 120 125

Leu His Phe Arg Arg Met Ile Val Lys Asp Ser Asp Leu Gln Asn Leu
130 135 140

Ala Arg Asp Arg Gly His Val Leu His Ala Leu Lys Leu Asp Lys Cys
145 150 155 160

Ser Gly Phe Thr Thr Asp Gly Leu Phe His Ile Gly Arg Phe Cys Lys
165 170 175

Ser Leu Arg Val Leu Phe Leu Glu Glu Ser Ser Ile Leu Glu Lys Asp
180 185 190

Gly Glu Trp Leu His Glu Leu Ala Leu Asn Asn Thr Val Leu Glu Thr
195 200 205

Leu Asn Phe Tyr Leu Thr Asp Ile Ala Val Val Lys Ile Glu Asp Leu
210 215 220

Glu Leu Leu Ala Lys Asn Cys Pro Asn Leu Val Ser Val Lys Leu Thr
225 230 235 240

Asp Cys Glu Ile Leu Asp Leu Val Asn Phe Phe Lys His Ala Ser Ala
245 250 255

Leu Glu Glu Phe Cys Gly Gly Thr Tyr Asn Glu Glu Pro Glu Arg Tyr
260 265 270

Ser Ala Ile Ser Leu Pro Ala Lys Leu Cys Arg Leu Gly Leu Thr Tyr
275 280 285

Ile Gly Lys Asn Glu Leu Pro Ile Val Phe Met Phe Ala Ala Val Leu
290 295 300

Lys Lys Leu Asp Leu Leu Tyr Ala Met Leu Asp Thr Glu Asp His Cys
305 310 315 320

Met Leu Ile Gln Arg Cys Pro Asn Leu Glu Val Leu Glu Thr Arg Asn
325 330 335

Val Ile Gly Asp Arg Gly Leu Glu Val Leu Gly Arg Cys Cys Lys Arg
340 345 350

Leu Lys Arg Leu Arg Ile Glu Arg Gly Asp Asp Asp Gln Gly Met Glu
355 360 365

Asp Glu Glu Gly Thr Val Ser His Arg Gly Leu Ile Ala Leu Ser Gln
370 375 380

Gly Cys Ser Glu Leu Glu Tyr Met Ala Val Tyr Val Ser Asp Ile Thr
385 390 395 400

Asn Ala Ser Leu Glu His Ile Gly Thr His Leu Lys Asn Leu Cys Asp
405 410 415

Phe Arg Leu Val Leu Leu Asp His Glu Glu Lys Ile Thr Asp Leu Pro
420 425 430

Leu Asp Asn Gly Val Arg Ala Leu Leu Arg Gly Cys Asp Lys Leu Arg
435 440 445

Arg Phe Ala Leu Tyr Leu Arg Arg Gly Gly Leu Thr Asp Val Gly Leu
450 455 460

Gly Tyr Ile Gly Gln Tyr Ser Pro Asn Val Arg Trp Met Leu Leu Gly
465 470 475 480

Tyr Val Gly Glu Ser Asp Ala Gly Leu Leu Glu Phe Ala Lys Gly Cys
485 490 495

Pro Ser Leu Gln Lys Leu Glu Met Arg Gly Cys Leu Phe Phe Ser Glu
500 505 510

Arg Ala Leu Ala Val Ala Ala Thr Gln Leu Thr Ser Leu Arg Tyr Leu
515 520 525

Trp Val Gln Gly Tyr Gly Val Ser Pro Ser Gly Arg Asp Leu Leu Val
530 535 540

Met Ala Arg Pro Phe Trp Asn Ile Glu Leu Ile Pro Ser Arg Lys Val
545 550 555 560

Ala Thr Asn Thr Asn Pro Asp Glu Thr Val Val Val Glu His Pro Ala
565 570 575

His Ile Leu Ala Tyr Tyr Ser Leu Ala Gly Gln Arg Ser Asp Phe Pro
580 585 590

Asp Thr Val Val Pro Leu Asp Thr Ala Thr Cys Val Asp Thr
595 600 605

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<211> 577
<212> DNA
<213> Triticum aestivum

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cctganaanc ccttccactg gtatacaaag gccgacg 577

<210> 24
<211> 159
<212> PRT
<213> Triticum aestivum

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<222> (98)
<223> Xaa = any amino acid

<220>
<221> UNSURE
<222> (136)
<223> Xaa = any amino acid

<220>
<221> UNSURE
<222> (138)
<223> Xaa = any amino acid

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20 25 30

Tyr Met Thr Glu Leu Lys Val Glu Pro Ala Asp Leu Glu Leu Leu Ala
35 40 45

Arg Asn Cys Lys Ser Leu Ile Ser Leu Lys Met Ser Asp Cys Asp Leu
50 55 60

Ser Asp Leu Ile Gly Phe Leu Gln Thr Ser Lys Ala Leu Gln Glu Ser
65 70 75 80

Ala Gly Arg Arg Phe Phe Arg Ser Arg Arg Val His Gln Val Arg Lys
85 90 95

Gly Xaa Ser His Leu Ala Met Leu Leu Gly Gly Pro Thr Phe Met Gly
100 105 110

Lys Asn Glu Ser Arg Tyr Phe Pro Tyr Pro Arg Arg Leu Lys Thr Gly
115 120 125

Pro Ala Tyr Thr Ser Ser Gln Xaa Lys Xaa Arg His Leu Thr Leu Lys
130 135 140

Pro Asn Leu Arg Val Ser Arg Gly Ala Gly Thr Asn Arg Pro Ile
145 150 155

<210> 25
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<213> Triticum aestivum

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cgcgcgctca gcctggacgg cggcggcgtc ccggaggagg cgctgcacct ggtgctcggc 180
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atcgacgcgc tcacgcggaa gcacgtcacc gtgcncttct gctacgccng tgtccccngc 300
gcgcctgctc gcgcgcttcc cgcgcctcga gtcnctcggg gtcaanggca agcccgcgcc 360
gccatgtacg gctcatcccc gacgactggg gcgcctacnc ccgggccctg cgtccctgag 420
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<210> 26
<211> 134
<212> PRT

<213> Triticum aestivum

<220>
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<222> (38)
<223> Xaa = any amino acid

<220>
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<223> Xaa = any amino acid

<400> 26

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Leu Asp Gly Gly Gly Val Pro Glu Glu Ala Leu His Leu Val Leu Gly
            20                  25                  30

Tyr Val Asp Asp Pro Xaa Asp Arg Glu Ala Ala Ser Leu Ala Cys Arg
        35                  40                  45

Arg Trp His His Ile Asp Ala Leu Thr Arg Lys His Val Thr Val Xaa
    50                  55                  60

Phe Cys Tyr Ala Xaa Val Pro Xaa Ala Pro Ala Arg Ala Leu Pro Ala
65                  70                  75                  80

Pro Arg Val Xaa Arg Gly Gln Xaa Gln Ala Arg Ala Ala Met Tyr Gly
                85                  90                  95
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Ser Ser Pro Thr Thr Gly Ala Pro Thr Pro Gly Pro Cys Val Pro Glu
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Leu Ala Ala Pro Leu Asp Xaa Leu Lys Ala Ala Gln Pro Cys Xaa Xaa
115 120 125

Xaa Ser Ser Pro Thr Thr
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<213> Triticum aestivum

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aggatgccca agcttgcaga aattggagct aaggagttgc tgctttagtg aacgtgcatt 420
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aagctaaaaa gaccaccacc agtttgactg tacatacatg tttgatgcca gcaaaaccca 720
caatgcggta tagggacatt ccaccttaca gtgccaatta cgggactgaa agctcaagta 780
aaagcgaccc actctgaact gccttggtat cttaggggca acatttttgg gtaagctgtt 840
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tattgttgtt ctacaaacag tattggatta gttgttgtac catctgtgaa acaatctgca 1020
caatgttatg tttaacccat gaatatcttg aaaaaaaaaa aaaaaaaaaa aaaa 1074

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<211> 221
<212> PRT
<213> Triticum aestivum

<400> 28
His Glu Val Gly Leu Met Ala Val Ala Glu Gly Cys Pro Asp Leu Glu
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Tyr Trp Ala Val His Val Ser Asp Ile Thr Asn Ala Ala Leu Glu Ala
20 25 30

Ile Gly Ala Phe Ser Lys Asn Leu Asn Asp Phe Arg Leu Val Leu Leu
35 40 45

Asp Arg Glu Val His Ile Thr Glu Leu Pro Leu Asp Asn Gly Val Arg
50 55 60

Ala Leu Leu Arg Gly Cys Thr Lys Leu Arg Arg Phe Ala Phe Tyr Val
65 70 75 80

Arg Pro Gly Ala Leu Ser Asp Ile Gly Leu Ser Tyr Val Gly Glu Phe
85 90 95

```
Ser Lys Thr Val Arg Tyr Met Leu Leu Gly Asn Ala Gly Gly Ser Asp
            100                 105                 110

Asp Gly Leu Leu Ala Phe Ala Arg Gly Cys Pro Ser Leu Gln Lys Leu
        115                 120                 125

Glu Leu Arg Ser Cys Cys Phe Ser Glu Arg Ala Leu Ala Val Ala Ala
    130                 135                 140

Leu Gln Leu Lys Ser Leu Arg Tyr Leu Trp Val Gln Gly Tyr Lys Ala
145                 150                 155                 160

Ser Pro Thr Gly Thr Asp Leu Met Ala Met Val Arg Pro Phe Trp Asn
                165                 170                 175

Ile Glu Phe Ile Ala Pro Asn Gln Asp Glu Pro Cys Pro Glu Gly Gln
            180                 185                 190

Ala Gln Ile Leu Ala Tyr Tyr Ser Leu Ala Gly Ala Arg Thr Asp Cys
        195                 200                 205

Pro Gln Ser Val Ile Pro Leu His Pro Ser Val Gly Ser
    210                 215                 220
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<213> Oryza sativa

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<400> 29

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ccggctgctg gttttcgtgc cagaaacagg cgattttacc agtgccagtt agctctcgcc  180
ttcctcctcc tccatcgtgc tactactctg ttcttctgga agaacactgg tctcctcgcc  240
tacctcagtc accactcacc acaccaggtg cgagctataa aaaccggcac gccaaaaatc  300
ttcaaaacca cacagaaacc tcagatctcc gaggcttcca agcgagtcga cgaaaatgcc  360
cgtgatggct ccgaccgcat ctcttctcct ctccccgagg ccgctgccgg cgagccgccg  420
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gtaccccgtg tccctcgtcg aggacctcga ccccagcgtg cccaccccgt tccagctcct  660
caaccgcgac ctcgtcatct ggaaggaccc aaaatccggc gagtgggtcg ccctcgacga  720
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gttccccacc ctcgtctcgc aagggctgct cttcgtgtgg cccgacgaga atgggtggga  960
gaaggccacg gctaccaagc ctccgatgtt accgaaggag tttgaggatc ctgcgttctc 1020
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aaaccctcgc atcagtgcaa cttttgtggc cccttgctat gcactgaaca aaattgagat 1260
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gtttagcatg ccaggaaaag catggtggca gcttgtccct cgatggtatg agcattggac 1440
ttcaaatttg gtctatgatg gtgatatgat agttctgcaa gggcaagaga agattttctt 1500
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cagccaacct gactggtttg gaaatcctag ccaagaagtg ttgccttcca ctgtcctttc 1680
aaagcgtgag atgctagata gatatgagca gcacacactg aaatgctcat cttgcaaagg 1740
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<210> 30
<211> 485
<212> PRT
<213> Oryza sativa

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<223> Xaa = any amino acid

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Leu Pro Ala Ser Arg Arg Val Pro Ser Leu Pro Ala Leu Ser Ala Ser
20 25 30

Gly Arg Leu Arg Leu Arg Arg Ala Arg Ala Asp Thr Arg Leu Arg Val
35 40 45

Ala Ala Pro Pro Ser Val Pro Gly Glu Ala Asp Gln Ala Pro Gly Glu
50 55 60

Thr Glu Pro Ser Thr Ser Ser Ala Asp Glu Lys Phe Val Trp Arg Asp
65 70 75 80

His Trp Tyr Pro Val Ser Leu Val Glu Asp Leu Asp Pro Ser Val Pro
85 90 95

Thr Pro Phe Gln Leu Leu Asn Arg Asp Leu Val Ile Trp Lys Asp Pro
100 105 110

Lys Ser Gly Glu Trp Val Ala Leu Asp Asp Arg Cys Pro His Arg Leu
115 120 125

Ala Pro Leu Ser Glu Gly Arg Ile Asp Glu Thr Gly Cys Leu Gln Cys
130 135 140

Ser Tyr His Gly Trp Ser Phe Asp Gly Ser Gly Ala Cys Thr Arg Ile
145 150 155 160

Pro Gln Ala Ala Pro Glu Gly Pro Glu Ala Lys Ala Val Arg Ser Pro
165 170 175

Lys Ala Cys Ala Ile Lys Phe Pro Thr Leu Val Ser Gln Gly Leu Leu
180 185 190

Phe Val Trp Pro Asp Glu Asn Gly Trp Glu Lys Ala Thr Ala Thr Lys
195 200 205

Pro Pro Met Leu Pro Lys Glu Phe Glu Asp Pro Ala Phe Ser Thr Val
210 215 220

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Thr Ile Gln Arg Asp Leu Tyr Tyr Gly Tyr Asp Thr Leu Met Glu Asn
225                 230                 235                 240

Val Ser Asp Pro Ser His Ile Glu Phe Ala Xaa His Lys Val Thr Gly
                245                 250                 255

Arg Arg Asp Arg Ala Arg Pro Leu Pro Phe Lys Met Glu Ser Ser Gly
            260                 265                 270

Ala Trp Gly Tyr Ser Gly Ser Asn Ser Gly Asn Pro Arg Ile Ser Ala
        275                 280                 285

Thr Phe Val Ala Pro Cys Tyr Ala Leu Asn Lys Ile Glu Ile Asp Thr
    290                 295                 300

Lys Leu Pro Ile Phe Gly Asp Gln Lys Trp Val Ile Trp Ile Cys Ser
305                 310                 315                 320

Phe Asn Ile Pro Met Ala Pro Gly Lys Thr Arg Ser Ile Val Cys Ser
                325                 330                 335

Ala Arg Asn Phe Phe Gln Phe Ser Met Pro Gly Lys Ala Trp Trp Gln
            340                 345                 350

Leu Val Pro Arg Trp Tyr Glu His Trp Thr Ser Asn Leu Val Tyr Asp
        355                 360                 365

Gly Asp Met Ile Val Leu Gln Gly Gln Glu Lys Ile Phe Leu Ser Ala
    370                 375                 380

Ser Lys Glu Ser Ser Ala Asp Ile Asn Gln Gln Tyr Thr Lys Ile Thr
385                 390                 395                 400

Phe Thr Pro Thr Gln Ala Asp Arg Phe Val Leu Ala Phe Arg Ala Trp
                405                 410                 415

Leu Arg Lys Phe Gly Asn Ser Gln Pro Asp Trp Phe Gly Asn Pro Ser
            420                 425                 430

Gln Glu Val Leu Pro Ser Thr Val Leu Ser Lys Arg Glu Met Leu Asp
        435                 440                 445

Arg Tyr Glu Gln His Thr Leu Lys Cys Ser Ser Cys Lys Gly Ala Tyr
    450                 455                 460

Asn Ala Phe Gln Thr Leu Gln Lys Val Phe Met Gly Ala Thr Val Ala
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Val Leu Leu Leu Leu
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<210> 31
<211> 1930
<212> DNA
<213> Glycine max

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gaaaaccatt gatggcgctc cctcactcca tctctgcctt agccaccaca ctcacactct 180

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cacaattttt aacgaaacaa acgcgaccca gaagcagaag aaacctctcc ctaacccctg  300
cacgcgttgc ggcgccaccc tcaacggttg aagccgatcg attataccca gaggccgaaa  360
ataacgaaac tgaggaagag tttagcgacg agagctcttc ctctaaattc acttggaggg  420
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ttgatgacaa atgcccccat cgtcttgccc ctttatctga agggaggata gatgaagatg  600
ggaagttgca gtgttcttat catgggtggt cttttgatgg gtgtggatct tgtgttaaga  660
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gcaatggcca accagaatgg tttggaaaca gcagcgacca gccattgcca tcaactgtgt 1560
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<210> 32
<211> 563
<212> PRT
<213> Glycine max

<400> 32

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            20                  25                  30

Ser Asn Arg Asn Ser Gln Phe Leu Thr Lys Gln Thr Arg Pro Arg Ser
        35                  40                  45

Arg Arg Asn Leu Ser Leu Thr Pro Ala Arg Val Ala Ala Pro Pro Ser
    50                  55                  60

Thr Val Glu Ala Asp Arg Leu Tyr Pro Glu Ala Glu Asn Asn Glu Thr
65                  70                  75                  80

Glu Glu Glu Phe Ser Asp Glu Ser Ser Ser Lys Phe Thr Trp Arg Asp
                85                  90                  95

His Trp Tyr Pro Val Ser Leu Ile Glu Asp Leu Asn Pro Leu Leu Pro
            100                 105                 110

Thr Pro Phe Gln Leu Leu Gly Arg Glu Ile Val Leu Trp Tyr Asp Lys
        115                 120                 125
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Ser Ile Ser Gln Trp Val Ala Phe Asp Asp Lys Cys Pro His Arg Leu
    130                 135                 140

Ala Pro Leu Ser Glu Gly Arg Ile Asp Glu Asp Gly Lys Leu Gln Cys
145                 150                 155                 160

Ser Tyr His Gly Trp Ser Phe Asp Gly Cys Gly Ser Cys Val Lys Ile
                165                 170                 175

Pro Gln Ala Ser Ser Glu Gly Pro Glu Ala Arg Ala Ile Gly Ser Pro
            180                 185                 190

Lys Ala Cys Ala Thr Arg Phe Pro Thr Leu Val Ser Gln Gly Leu Leu
        195                 200                 205

Phe Val Trp Ala Asp Glu Asn Gly Trp Glu Lys Ala Lys Ala Ser Asn
    210                 215                 220

Pro Pro Met Phe Pro Asp Asp Phe Asp Lys Pro Glu Phe Pro Thr Val
225                 230                 235                 240

Asn Ile Gln Arg Asp Leu Phe Tyr Gly Tyr Asp Thr Leu Met Glu Asn
                245                 250                 255

Val Ser Asp Pro Ser His Ile Glu Phe Ala His His Lys Val Thr Gly
            260                 265                 270

Arg Arg Asp Arg Ala Lys Pro Leu Pro Phe Lys Met Asp Ser Arg Gly
        275                 280                 285

Ser Trp Gly Phe Ser Gly Ala Asn Glu Gly Asn Pro Gln Ile Ser Ala
    290                 295                 300

Lys Phe Val Ala Pro Cys Tyr Met Met Asn Lys Ile Glu Ile Asp Thr
305                 310                 315                 320

Lys Leu Pro Val Val Gly Asp Gln Lys Trp Val Val Trp Ile Cys Ser
                325                 330                 335

Phe Asn Val Pro Met Ala Pro Gly Lys Thr Arg Ser Ile Val Cys Ser
            340                 345                 350

Ala Arg Asn Phe Phe Gln Phe Ser Val Pro Gly Pro Ala Trp Trp Gln
        355                 360                 365

Val Asn Val Ile Leu Leu Phe Ala Phe Asn Phe Lys Gln Cys Ile His
    370                 375                 380

Val Thr Gln Val Val Pro Arg Trp Tyr Glu His Trp Thr Ser Asn Lys
385                 390                 395                 400

Val Tyr Asp Gly Asp Met Ile Val Leu Gln Gly Gln Glu Lys Ile Phe
                405                 410                 415

Leu Ser Glu Thr Lys Glu Gly Gly Asp Ile Asn Lys Gln Tyr Thr Asn
            420                 425                 430

Ile Thr Phe Thr Pro Thr Gln Ala Asp Arg Phe Val Leu Ala Phe Arg
        435                 440                 445
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Asn Trp Leu Arg Arg His Gly Asn Gly Gln Pro Glu Trp Phe Gly Asn
    450                 455                 460

Ser Ser Asp Gln Pro Leu Pro Ser Thr Val Leu Ser Lys Arg Gln Met
465                 470                 475                 480

Leu Asp Arg Phe Glu Gln His Thr Leu Lys Cys Ser Ser Cys Lys Ala
                485                 490                 495

Ala Tyr Glu Gly Phe Gln Thr Trp Gln Lys Val Leu Ile Gly Ala Thr
            500                 505                 510

Val Val Phe Cys Ala Thr Ser Gly Ile Pro Ser Asp Phe Gln Leu Arg
        515                 520                 525

Val Leu Leu Ala Gly Leu Ala Val Val Ser Ala Ala Ile Ala Phe Ala
    530                 535                 540

Leu Asn Gln Leu Gln Lys Asn Phe Glu Phe Val Asp Tyr Val His Ala
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Glu Ile Asp
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<212> DNA
<213> Triticum aestivum

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cggatgctgc cggcctcggc cgtggcgtcc gagtcgccgt ggacgganca ggagccgcca 240
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gaggacctgg acccggcgcg cccacggcaa atggtgctgg gatccgcgtg gtanctggta 360
caacgcggng ccggcgaatg gcgctgttca caccgtgccc gnacgcctgg cncgnctcga 420
gggcgcatca caaaaggcgg ncagtcgtta cacgggtggn ctcacgncgc gggctgaatt 480
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naanttgtgt ctccn 555

<210> 34
<211> 144
<212> PRT
<213> Triticum aestivum

<220>
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<222> (62)
<223> Xaa = any amino acid

<220>
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<222> (70)
<223> Xaa = any amino acid

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<220>
<221> UNSURE
<222> (124)..(125)
<223> Xaa = any amino acid

<220>
<221> UNSURE
<222> (140)
<223> Xaa = any amino acid

<220>
<221> UNSURE
<222> (142)
<223> Xaa = any amino acid

<400> 34
Met Asp Pro Leu Arg Leu Leu Leu Pro Arg Ala Gln Ala Gln Pro Leu
1 5 10 15

Leu Pro Leu Pro Thr Gly Val Gln Ala Pro Ser Val Arg Pro Gln Leu
20 25 30

```
Val Pro Arg Arg Arg Ala Arg Arg His Arg Asn Gly Ala Ala Arg Met
         35                  40                  45

Leu Pro Ala Ser Ala Val Ala Ser Glu Ser Pro Trp Thr Xaa Gln Glu
     50                  55                  60

Pro Pro Ser Gly Glu Xaa Glu Glu Arg Phe Asp Trp Leu Asp Gln Trp
 65                  70                  75                  80

Tyr Pro Phe Ala Pro Val Glu Asp Leu Asp Pro Ala Arg Pro Arg Gln
                 85                  90                  95

Met Val Leu Gly Ser Ala Trp Xaa Leu Val Gln Arg Gly Ala Gly Glu
            100                 105                 110

Trp Arg Cys Ser His Arg Ala Arg Thr Pro Gly Xaa Xaa Arg Gly Arg
        115                 120                 125

Ile Thr Lys Gly Gly Gln Ser Leu His Gly Trp Xaa His Xaa Ala Gly
    130                 135                 140
```

<210> 35
<211> 1864
<212> DNA
<213> Triticum aestivum

<400> 35

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gcacgagggc aatgttctag aagcaccgaa gcaccgagag ataagtggca ctagtacaaa   60
gctggagcga ggaagatctc ggccccaaca aaacctcgga ccccttccct ccacacgatc  120
ccgaggaagg aaggaaaggc agacgaaatg ccggtgctgg cgatgccgtc cgcctccctc  180
cccctcctct cccccggggc accggccgct gctgcgcccg tcgaccctcc cggcctcccg  240
tctcggcagc ggcatcctcc gcgtggccgc gccgacgtcg gtccccggcg aggcggagcg  300
ggcggaggag ccgagcacga gcacgagcac ctcgcctgaa tcgtccgggg agaagttcgt  360
gtggcgggac cactggtacc cggtctcgct cgtggaggac ctggacccgc gcgtgcccac  420
cccgttccag ctcctcaacc gcgacctcgt catctggaac gaccccaact ccggcgactg  480
ggtcgcgctc gacgaccgct gcccgcaccg cctcgccccg ctctcggagg ggcggatcga  540
cgagacgggc ggcctgcagt gctcctacca cggctggtcc ttcgacggct ccggcgcctg  600
caccaggatc ccgcaggccg cgcccgaggg gcccgaggcc cgggcggtgc gctcgcccag  660
ggcctgcgcc accaagttcc ccaccctcct ctcccagggc ctgctcttcg tctggcctga  720
cgagaatgga tgggacaagg ccaaggccac caagcctcca atgctgccga aggagttcga  780
tgacccggcc ttctccaccg tgacgatcca gagggacctc ttctatgggt atgacacgtt  840
gatggagaac gtctctgatc cctcgcatat agaatttgct caccacaagg tcactggacg  900
aagagataga gccaagcctt tgccatttaa aatggaatca agtggcgcat ggggatattc  960
aggggcaaat accggcaatc ctcgcatcac tgcaactttc gaggcccctt gctatgcact 1020
gaacaaaata gagattgaca ccaaattacc gattgtggga gatcagaaat gggtcatatg 1080
gatttgctcc ttcaacattc caatggcccc agggaaaact cgttctattg tctgtagtgc 1140
tcgaaacttt ttccagttta caatgccagg aaaggcatgg tggcagtttg tccctcgatg 1200
gtacgaacat tggacctcaa atttggtcta cgacggcgat atgatcgtgc ttcaaggcca 1260
agagaaggtt ttcctgtctg catccaagga gtcgtctgca gatgttaatc agcagtacac 1320
aaagctcaca ttcacaccca cacaggccga ccgatttgtt ttagcattcc gggcatggct 1380
acgaaaattc ggaaatagcc agcctgactg gtatggaagt cctagccaag atgcattgcc 1440
ttctacggtc ctttcaaagc gagagatgct agacagatac gagcagcaca cgctgaaatg 1500
ctcgtcctgc agaggagcgc acaaggcctt tcagactttg cagaaggtgt tcatgggggc 1560
gacggtggtg tttggcgcga catccgggat ccctgcggat gttcagctca gaatattgct 1620
cggtgccggt gctctggtca gcgccgctct ggcctatgtc ttctacgacc gccagaagca 1680
tttcgtgttt gtggactacg tgcacgctga cattgattga ttagggagat aaacattagt 1740
tatttttgtg aggatctggt gtggtgtggt gtggagacat cccacgatca atcatgtgca 1800
taacctagcc aaggagtaca tatagctttc agtgggtaca tgagattggc ccagtatgtt 1860
gttt                                                               1864
```

<210> 36
<211> 487
<212> PRT
<213> Triticum aestivum

<400> 36
Leu Arg Val Ala Ala Pro Thr Ser Val Pro Gly Glu Ala Glu Arg Ala
1 5 10 15

Glu Glu Pro Ser Thr Ser Thr Ser Thr Ser Pro Glu Ser Ser Gly Glu
20 25 30

Lys Phe Val Trp Arg Asp His Trp Tyr Pro Val Ser Leu Val Glu Asp
35 40 45

Leu Asp Pro Arg Val Pro Thr Pro Phe Gln Leu Leu Asn Arg Asp Leu
50 55 60

Val Ile Trp Asn Asp Pro Asn Ser Gly Asp Trp Val Ala Leu Asp Asp
65 70 75 80

Arg Cys Pro His Arg Leu Ala Pro Leu Ser Glu Gly Arg Ile Asp Glu
85 90 95

Thr Gly Gly Leu Gln Cys Ser Tyr His Gly Trp Ser Phe Asp Gly Ser
100 105 110

Gly Ala Cys Thr Arg Ile Pro Gln Ala Ala Pro Glu Gly Pro Glu Ala
115 120 125

Arg Ala Val Arg Ser Pro Arg Ala Cys Ala Thr Lys Phe Pro Thr Leu
130 135 140

Leu Ser Gln Gly Leu Leu Phe Val Trp Pro Asp Glu Asn Gly Trp Asp
145 150 155 160

Lys Ala Lys Ala Thr Lys Pro Pro Met Leu Pro Lys Glu Phe Asp Asp
165 170 175

Pro Ala Phe Ser Thr Val Thr Ile Gln Arg Asp Leu Phe Tyr Gly Tyr
180 185 190

Asp Thr Leu Met Glu Asn Val Ser Asp Pro Ser His Ile Glu Phe Ala
195 200 205

His His Lys Val Thr Gly Arg Arg Asp Arg Ala Lys Pro Leu Pro Phe
210 215 220

Lys Met Glu Ser Ser Gly Ala Trp Gly Tyr Ser Gly Ala Asn Thr Gly
225 230 235 240

Asn Pro Arg Ile Thr Ala Thr Phe Glu Ala Pro Cys Tyr Ala Leu Asn
245 250 255

Lys Ile Glu Ile Asp Thr Lys Leu Pro Ile Val Gly Asp Gln Lys Trp
260 265 270

Val Ile Trp Ile Cys Ser Phe Asn Ile Pro Met Ala Pro Gly Lys Thr
275 280 285

```
Arg Ser Ile Val Cys Ser Ala Arg Asn Phe Phe Gln Phe Thr Met Pro
    290                 295                 300

Gly Lys Ala Trp Trp Gln Phe Val Pro Arg Trp Tyr Glu His Trp Thr
305                 310                 315                 320

Ser Asn Leu Val Tyr Asp Gly Asp Met Ile Val Leu Gln Gly Gln Glu
                325                 330                 335

Lys Val Phe Leu Ser Ala Ser Lys Glu Ser Ser Ala Asp Val Asn Gln
            340                 345                 350

Gln Tyr Thr Lys Leu Thr Phe Thr Pro Thr Gln Ala Asp Arg Phe Val
        355                 360                 365

Leu Ala Phe Arg Ala Trp Leu Arg Lys Phe Gly Asn Ser Gln Pro Asp
    370                 375                 380

Trp Tyr Gly Ser Pro Ser Gln Asp Ala Leu Pro Ser Thr Val Leu Ser
385                 390                 395                 400

Lys Arg Glu Met Leu Asp Arg Tyr Glu Gln His Thr Leu Lys Cys Ser
                405                 410                 415

Ser Cys Arg Gly Ala His Lys Ala Phe Gln Thr Leu Gln Lys Val Phe
            420                 425                 430

Met Gly Ala Thr Val Val Phe Gly Ala Thr Ser Gly Ile Pro Ala Asp
        435                 440                 445

Val Gln Leu Arg Ile Leu Leu Gly Ala Gly Ala Leu Val Ser Ala Ala
    450                 455                 460

Leu Ala Tyr Val Phe Tyr Asp Arg Gln Lys His Phe Val Phe Val Asp
465                 470                 475                 480

Tyr Val His Ala Asp Ile Asp
                485
```

<210> 37
<211> 592
<212> PRT
<213> Arabidopsis thaliana

<400> 37

```
Met Glu Asp Pro Asp Ile Lys Arg Cys Lys Leu Ser Cys Val Ala Thr
  1               5                  10                  15

Val Asp Asp Val Ile Glu Gln Val Met Thr Tyr Ile Thr Asp Pro Lys
            20                  25                  30

Asp Arg Asp Ser Ala Ser Leu Val Cys Arg Arg Trp Phe Lys Ile Asp
        35                  40                  45

Ser Glu Thr Arg Glu His Val Thr Met Ala Leu Cys Tyr Thr Ala Thr
    50                  55                  60

Pro Asp Arg Leu Ser Arg Arg Phe Pro Asn Leu Arg Ser Leu Lys Leu
65                  70                  75                  80
```

```
Lys Gly Lys Pro Arg Ala Ala Met Phe Asn Leu Ile Pro Glu Asn Trp
                  85                  90                  95

Gly Gly Tyr Val Thr Pro Trp Val Thr Glu Ile Ser Asn Asn Leu Arg
            100                 105                 110

Gln Leu Lys Ser Val His Phe Arg Arg Met Ile Val Ser Asp Leu Asp
        115                 120                 125

Leu Asp Arg Leu Ala Lys Ala Arg Ala Asp Asp Leu Glu Thr Leu Lys
    130                 135                 140

Leu Asp Lys Cys Ser Gly Phe Thr Thr Asp Gly Leu Leu Ser Ile Val
145                 150                 155                 160

Thr His Cys Arg Lys Ile Lys Thr Leu Leu Met Glu Glu Ser Ser Phe
                165                 170                 175

Ser Glu Lys Asp Gly Lys Trp Leu His Glu Leu Ala Gln His Asn Thr
            180                 185                 190

Ser Leu Glu Val Leu Asn Phe Tyr Met Thr Glu Phe Ala Lys Ile Ser
        195                 200                 205

Pro Lys Asp Leu Glu Thr Ile Ala Arg Asn Cys Arg Ser Leu Val Ser
    210                 215                 220

Val Lys Val Gly Asp Phe Glu Ile Leu Glu Leu Val Gly Phe Phe Lys
225                 230                 235                 240

Ala Ala Ala Asn Leu Glu Glu Phe Cys Gly Gly Ser Leu Asn Glu Asp
                245                 250                 255

Ile Gly Met Pro Glu Lys Tyr Met Asn Leu Val Phe Pro Arg Lys Leu
            260                 265                 270

Cys Arg Leu Gly Leu Ser Tyr Met Gly Pro Asn Glu Met Pro Ile Leu
        275                 280                 285

Phe Pro Phe Ala Ala Gln Ile Arg Lys Leu Asp Leu Leu Tyr Ala Leu
    290                 295                 300

Leu Glu Thr Glu Asp His Cys Thr Leu Ile Gln Lys Cys Pro Asn Leu
305                 310                 315                 320

Glu Val Leu Glu Thr Arg Asn Val Ile Gly Asp Arg Gly Leu Glu Val
                325                 330                 335

Leu Ala Gln Tyr Cys Lys Gln Leu Lys Arg Leu Arg Ile Glu Arg Gly
            340                 345                 350

Ala Asp Glu Gln Gly Met Glu Asp Glu Glu Gly Leu Val Ser Gln Arg
        355                 360                 365

Gly Leu Ile Ala Leu Ala Gln Gly Cys Gln Glu Leu Glu Tyr Met Ala
    370                 375                 380

Val Tyr Val Ser Asp Ile Thr Asn Glu Ser Leu Glu Ser Ile Gly Thr
385                 390                 395                 400
```

```
Tyr Leu Lys Asn Leu Cys Asp Phe Arg Leu Val Leu Leu Asp Arg Glu
                405                 410                 415

Glu Arg Ile Thr Asp Leu Pro Leu Asp Asn Gly Val Arg Ser Leu Leu
            420                 425                 430

Ile Gly Cys Lys Lys Leu Arg Arg Phe Ala Phe Tyr Leu Arg Gln Gly
        435                 440                 445

Gly Leu Thr Asp Leu Gly Leu Ser Tyr Ile Gly Gln Tyr Ser Pro Asn
    450                 455                 460

Val Arg Trp Met Leu Leu Gly Tyr Val Gly Glu Ser Asp Glu Gly Leu
465                 470                 475                 480

Met Glu Phe Ser Arg Gly Cys Pro Asn Leu Gln Lys Leu Glu Met Arg
                485                 490                 495

Gly Cys Cys Phe Ser Glu Arg Ala Ile Ala Ala Ala Val Thr Lys Leu
            500                 505                 510

Pro Ser Leu Arg Tyr Leu Trp Val Gln Gly Tyr Arg Ala Ser Met Thr
        515                 520                 525

Gly Gln Asp Leu Met Gln Met Ala Arg Pro Tyr Trp Asn Ile Glu Leu
    530                 535                 540

Ile Pro Ser Arg Arg Val Pro Glu Val Asn Gln Gln Gly Glu Ile Arg
545                 550                 555                 560

Glu Met Glu His Pro Ala His Ile Leu Ala Tyr Tyr Ser Leu Ala Gly
                565                 570                 575

Gln Arg Thr Asp Cys Pro Thr Thr Val Arg Val Leu Lys Glu Pro Ile
            580                 585                 590
```

<210> 38
<211> 520
<212> PRT
<213> Zea mays

<400> 38

```
Met Arg Ala Thr Ile Pro Ala Leu Ser Leu Leu Val Thr Pro Arg Leu
  1               5                  10                  15

Pro Ser Leu Ala Val Pro Leu Ala Gly Gly Arg Leu Arg Glu Gly Gly
             20                  25                  30

Arg Ser Arg Thr Arg Leu Arg Val Ala Ala Pro Thr Ser Val Pro Gly
         35                  40                  45

Glu Ala Ala Glu Gln Ala Glu Pro Ser Thr Ser Ala Pro Glu Ser Gly
     50                  55                  60

Glu Lys Phe Ser Trp Arg Asp His Trp Tyr Pro Val Ser Leu Val Glu
 65                  70                  75                  80

Asp Leu Asp Pro Ser Arg Pro Thr Pro Phe Gln Leu Leu Asn Arg Asp
                 85                  90                  95
```

```
Leu Val Ile Trp Lys Glu Pro Lys Ser Gly Glu Trp Val Ala Leu Asp
            100                 105                 110

Asp Arg Cys Pro His Arg Leu Ala Pro Leu Ser Glu Gly Arg Ile Asp
        115                 120                 125

Glu Thr Gly Cys Leu Gln Cys Ser Tyr His Gly Trp Ser Phe Asp Gly
    130                 135                 140

Ser Gly Ala Cys Thr Lys Ile Pro Gln Ala Met Pro Glu Gly Pro Glu
145                 150                 155                 160

Ala Arg Ala Val Arg Ser Pro Lys Ala Cys Ala Ile Lys Phe Pro Thr
                165                 170                 175

Leu Val Ser Gln Gly Leu Leu Phe Val Trp Pro Asp Glu Asn Gly Trp
            180                 185                 190

Glu Lys Ala Ala Ala Thr Lys Pro Pro Met Leu Pro Lys Glu Phe Glu
        195                 200                 205

Asp Pro Ala Phe Ser Thr Val Thr Ile Gln Arg Asp Leu Phe Tyr Gly
    210                 215                 220

Tyr Asp Thr Leu Met Glu Asn Val Ser Asp Pro Ser His Ile Glu Phe
225                 230                 235                 240

Ala His His Lys Val Thr Gly Arg Arg Asp Arg Ala Arg Pro Leu Thr
                245                 250                 255

Phe Arg Met Glu Ser Ser Gly Ala Trp Gly Tyr Ser Gly Ala Asn Ser
            260                 265                 270

Gly Asn Pro Arg Ile Thr Ala Thr Phe Glu Ala Pro Cys Tyr Ala Leu
        275                 280                 285

Asn Lys Ile Glu Ile Asp Thr Lys Leu Pro Ile Phe Gly Asp Gln Lys
    290                 295                 300

Trp Val Ile Trp Ile Cys Ser Phe Asn Ile Pro Met Ala Pro Gly Lys
305                 310                 315                 320

Thr Arg Ser Ile Val Cys Ser Ala Arg Asn Phe Phe Gln Phe Thr Met
                325                 330                 335

Pro Gly Lys Ala Trp Trp Gln Leu Val Pro Arg Trp Tyr Glu His Trp
            340                 345                 350

Thr Ser Asn Leu Val Tyr Asp Gly Asp Met Ile Val Leu Gln Gly Gln
        355                 360                 365

Glu Lys Ile Phe Leu Ala Ala Thr Lys Glu Ser Ser Thr Asp Ile Asn
    370                 375                 380

Gln Gln Tyr Thr Lys Ile Thr Phe Thr Pro Thr Gln Ala Asp Arg Phe
385                 390                 395                 400

Val Leu Ala Cys Arg Thr Trp Leu Arg Lys Phe Gly Asn Ser Gln Pro
                405                 410                 415
```

```
Glu Trp Phe Gly Asn Pro Thr Gln Glu Ala Leu Pro Ser Thr Val Leu
            420                 425                 430

Ser Lys Arg Glu Met Leu Asp Arg Tyr Glu Gln Leu Ser Leu Lys Cys
        435                 440                 445

Ser Ser Cys Lys Gly Ala Tyr Asn Ala Phe Gln Asn Leu Gln Lys Val
    450                 455                 460

Phe Met Gly Ala Thr Val Val Cys Cys Ala Ala Ala Gly Ile Pro Pro
465                 470                 475                 480

Asp Val Gln Leu Arg Leu Leu Ile Gly Ala Ala Ala Leu Val Ser Ala
                485                 490                 495

Ala Ile Ala Tyr Ala Phe His Glu Leu Gln Lys Asn Phe Val Phe Val
            500                 505                 510

Asp Tyr Val His Ala Asp Ile Asp
        515                 520
```